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## BANGLADESH LANDS T-2 PROGRAMME

"Made available under NASA sponsorship  
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semination of Earth Resources Survey  
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### I. INTRODUCTION

Title of Investigation

Investigations using data from  
Landsat-2

7.7-10.0.2.9

Investigation Number

G 27950

CR-149132

Principal Investigator

Dr. Anwar Hossain

Name and address of  
Principal Investigator's  
Organisation

Member, Bangladesh Atomic Energy  
Commission, P.O. Box 158, Dacca,  
Bangladesh.

Date

October, 1976.

Type of report and period  
covered

Quarterly Report July -  
September, 1976.

Name and address of  
National Sponsoring Agency

Bangladesh National ERTS Committee,  
Science & Technology Division,  
Ministry of Education, Government  
of the People's Republic of  
Bangladesh, Dacca, Bangladesh.

### II. TECHNIQUES

Landsat Imageries were reproduced using conventional  
Photographic Techniques. The products used for analysis consist  
mainly of black and white prints of 9½ inch size. Small test  
areas were blown up to a maximum enlargement of 10 times.

The interpretation was done mainly by visual observa-  
tions in all MSS bands. In some cases stereoscope, light  
tables etc., were used. Aerial photographs and Ground-truth  
data available were used for analysis in conjunction with the  
Landsat imageries.

Ground truth data in the field of Agriculture, Geology,  
Hydrology, Forestry, Fisheries, Cartography, Meteorology etc.  
were also collected by the individual sectors through their  
respective departmental sources at various Test sites in

National Sponsoring Agency Science & Technology Division,  
Ministry of Education, Government  
of the People's Republic of  
Bangladesh, Dacca, Bangladesh.

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Ground truth data in the field of Agriculture, Geology, Hydrology, Forestry, Fisheries, Cartography, Meteorology etc. were also collected by the individual sectors through their respective departmental sources at various Test sites in Bangladesh.

## III. ACCOMPLISHMENTS

The Government of Bangladesh has approved the revised Landsat Scheme and the recruitment of full-time officers/staff are in the process. UNDP is taking appropriate steps for the appointment of a Remote Sensing Adviser and other related activities.

US-AID Dacca in collaboration with Bangladesh Landsat Task Force organised a Satellite Demonstration Programme (ATS-6) in Bangladesh on August 2, 1976. This demonstration was sponsored by the Agency for International Development (AID) as a part of their plans to increase assistance to the

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developing countries in the application of such advanced technologies as satellite remote sensing, communication and aerial photographic imageries to the problem of economic growth and human development.

Landsat imageries have been used for studying new land accretion in the Bay of Bengal. There are positive indication of new land in the south of Patuakhali and Hatiya Island. There are also indications of erosion in the north of Hatiya Island. A systematic study is underway. Scheme for stabilization and consolidation of these new lands by afforestation & other methods are under processing. Necessary Govt. orders have been issued setting aside land for afforestation in these new accreted lands on the basis of Landsat mosaics.

A joint research Project namely "The optimization of benefits from the Haors of Sylhet and Mymensingh" was undertaken by the Department of Geography, Jahangirnagar University, Savar, Dacca and Environmental Research Institute of Michigan (ERIM) U.S.A. Bangladesh Landsat Task Force supplied necessary Landsat imageries and extended collaboration for implementation of the joint project. Ground truth data, aerial photographs and Landsat imageries were used in conjunction with topo maps, cadastral maps etc. for preparing landuse maps of the Haor area. ERIM produced a computerized landuse maps of the Haor area. The Preliminary studies of the computerised maps suggest a high degree of positive correlation between the ground-truths and objects depicted in the Landsat imageries.

Cartographic up-dating of mapping, winter crop estimation, inventory of forest resources, water drainage pattern, fish resources, flood forecasting & damage etc. using Landsat imageries are under progress.

#### IV. SIGNIFICANT RESULTS

1. Preliminary land use maps of Sunamgonj, Baniachong and Srimongal areas in the Sylhet districts have been prepared.
2. Indication of new land in the South of Patuakhali district and Hatiya island have been found and erosion in the northern part of Hatiya island is also indicated.
3. On the basis of the Landsat mosaics of the coastal area of Bangladesh, a Govt. notification has been issued setting aside Land for afforestation in the newly accreted land.
4. Landsat imageries have been supplied to the following organisations for studies :-

a) Universities for research in water resources, river morphology and other geographic & geological features studies. Universities are also using Landsat imageries in the graduate/Post Graduate courses/research.

b) Geological Survey for geological feature studies. Drainage patterns old and new, that developed in parts of Comilla district, have been identified.

## V. PUBLICATIONS

The following papers/articles/reports have been published during this period.

1. Index to Landsat coverages of Bangladesh - September 1976 - M.A.H. Pramanik and M.J. Kabir.
2. A report on Geology - M.A. Bakr.

## VI. PROBLEMS

Appointment of Remote Sensing Adviser, full time Officers/staff and procurement of equipment/materials etc. are in the process.

## VII. DATA QUALITY AND DELIVERY

The quality of the data product is good. As far as the delivery of the Landsat-2 imageries is concerned, we did not receive any imageries from EROS Data Centre after December 1975 as per our standing request. List of Landsat imageries available with EROS has been received and the imageries will be ordered as required.

## VIII. RECOMMENDATIONS

The contract agreement of Bangladesh with NASA for supplying Landsat-2 imageries expires on May 31, 1976. Request has been sent for its extension upto July 31, 1977. Due to limitation of the Tape Recording space of Landsat-2, a revised request for specific areas has been sent. It is recommended that the extension may be granted.

NASA should ensure the continuity of Landsat satellites. Proposal for participation in Landsat-C has been sent. This may be accepted. A Landsat Data Receiving facility should be established in the region so that dynamic features can be studied.

## IX. CONCLUSIONS

Promising results have been obtained by analysing Landsat imageries by different sectors of Bangladesh Landsat Programme and Universities. Landsat imageries are very valuable for studying land features and resources survey. It is strongly felt that Landsat imageries will be a continuous source of information required for planning and development of Bangladesh.